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ABSTRACT

The current research on the "characteristics of effective schools" suffers from a lack of any sound theoretical foundation. In order to establish such a foundation, researchers used the methodology of clinical analysis to determine the goals, purposes, and beliefs underlying the overt behavior patterns found in the effective school improvement projects being conducted in four states and at least eight Connecticut school districts. The characteristics of effective schools found through this process consisted of isolated, if not unrelated, variables. Analysis revealed a common theoretical basis for behavior across three effect domains: school effects, teacher effects, and student effects. The analysis also suggests listing overt behaviors as a method of identifying what actions might be taken at the school level to increase student achievement. Clinical analysis of one effective school characteristic, the opportunity to learn, supports a theory stating that the principles of behaviorism can be built into the school and the classroom and can ultimately be brought to bear on the student. (Author/PGD)

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THEORY INTO PRACTICE: A THEORETICAL AND RESEARCH BASE FOR THE CHARACTERISTICS OF EFFECTIVE SCHOOLS

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The Problem

The search for process variables which may define effective vs. less effective educational practices, policies and structures has been the genesis of most research and reform in education during the twentieth century. All too often, however, educational research suffers from shortcomings which render its findings insignificant, both statistically and in terms of its impact on policy and action.

Kerlinger and Gage have suggested two reasons for the failure of educational research to influence action and policy. Too often, Gage has pointed out, educational research and practice has proceded "without explicit theoretical framework, in intellectual disarray, to the testing...(and implementation)...of arbitrary,

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unrationalized hypotheses (1963, p.102)." Kerlinger and Pedhazur, on the other hand, suggest that educational research suffers from "one-variable thinking." It seems, they conclude, "that much of the world is correlated - especially the world of (educational) variables...(1973, p.46)", but educational research tends to ignore this fact.

Major studies such as Coleman's 1966 Study of Equal Educational Opportunity have attempted to account for the multivariate reality of educational settings as suggested by Kerlinger while continuing to overlook Gage's concerns regarding theoretical framework. The results of such studies, among other things, have tended to ascribe erroneous causality to static variables such as SES (Socio-economic status) due to the fact that, in multi-variate analysis, global variables such as SES tend to override dynamic variables closer to student learning (dynamic variables being defined as those which may be manipulated).

A further result of such research has been a sense of hopelessness in American education. Faced with the overriding statistical significance of global variables such as SES educators readily lost faith in instructional interventions and accepted achievement as the predestination of SES.

A major reaction to the educational doomsday prophets such as Coleman (1966) and Jenks (1972) has been a vein of research collectively referred to as "School Climate" or the

"Characteristics of Effective Schools." This research and the myriad of school improvement projects based on its results also suffer from a lack of any cohesive theoretical framework. The research on the Characteristics of Effective Schools has, by design, avoided theoretical foundations, choosing instead various "shotgun" research methods, including ex post facto designs, simple correlational analyses, and the generation of hypotheses in an ex post facto manner (e.g., Edmonds 1981; Lezotte 1980; Denham & Lieberman 1980).

This approach to research and practice, in the absence of any theoretical foundation, is already presenting problems for both the advancement of research on the characteristics of effective schools and the implementation of these characteristics in public school settings. School improvement projects based on the characteristics of effective schools already are proceeding in piecemeal fashion, identifying a promising characteristic and implementing it, most often in isolation and without regard for the student and the psychological, social and organizational milieu of the public school.

Practicing teachers, for example, often fail to see any relationship between their classroom procedures, the building administration's decisions requiring or limiting certain procedures and student achievement. The characteristics of effective schools do, however, appear to have firm foundations in learning, behavior, and

organizational theory. Such foundations must be identified and articulated in order to conceptualize sound hypotheses, research designs, and implementation strategies for these characteristics (Miller, 1969). A theoretical framework for the Characteristics of Effective Schools can reveal the interdependence of actions such as these, previously considered to be independent or at best "loosely coupled."

Objectives and Methodology

The aim of this paper is to establish a model for the identification of the theoretical bases and provide a conceptual framework for the guidance of further research and practice on the characteristics of effective schools.

This aim is accomplished by a clinical analysis of the research and practice to date on one of the several characteristics of effective schools. The methodology of clinical analysis is adopted from Argyris and Schon's (1974) work on "theory-into-practice" and involves an analysis of overt behavior (as opposed to the statistical analysis of coded behavior). The methodology attempts to identify the theoretical underpinnings of such behavior.

Argyris and Schon's work on theory-into-practice is a special application of clinical analysis and is based on theoretical assumption most applicable to the present analysis. This is so, particularly if we consider both the research and implementation activities relative to the characteristicss of effective schools as clinical examples

of overt behavior. The several assumptions of clinical analysis make this clear: (a) most behavior (including research) is goal-directed; (b) goal-directed behavior is self-sustaining, (i.e., repetitive); (c) such behavior repeats itself in patterns; (d) such behavior patterns are identifiable; and (e) the effect (character, identity, etc.) of an activity, group, individual, etc. is the result of behavior patterns (as opposed to isolated behaviors). The methodology of clinical analysis essentially traces overt behavior, in reverse order, through these assumptions. The identification of a theoretical underpinning, then, comes at the point of analysis where the goal, purpose, or underlying belief of the behavior pattern is hypothesized (i.e., at assumption "a").

Analysis

A review of effective school improvement projects in four states and at least eight Connecticut school districts reveals patterns of behavior that define the several characteristics of effective schools as isolated, if not unrelated, variables. Research studies tend to deal with a single characteristic such as time-on-task (Denham & Lieberman, 1980) in isolation, apart from the several other characteristics of effective schools, and in one dimension, usually at the classroom level, apart from the school organizational unit. It is typical, further, for schools involved in school improvement projects to either a)

identify only one or two of the several characteristics of effective schools as "priorities" for action plans, disregarding the other characteristics, or b) specify plans of actions which address only one dimension of the school organization, typically either the classroom, the principal's office, the custodians, the cafeteria, etc. but rarely all of these in a unified manner. Clinical analysis provides a structure by which the characteristics of effective schools can be addressed at all levels of the school organization and in relation to each other.

Clinical analysis also establishes a structure for the productive review of the often disparate research on school effectiveness. A review of the historical development and of the current literature (Coleman 1966; Jenks 1972; Edmonds 1979; Lezotte 1980; Madaus, et al 1980) on the characteristics of effective schools, for example, yields both isolated definitions and a more useful set of "loosely coupled" definitions. Clinical analysis allows us to utilize such definitions as the latter to (a) identify the characteristics of effective schools as "school effect" variables; (b) through clinical analysis, place each of these into a theoretical matrix (variable x effect domains) along with corresponding "teacher effects" (classroom effects) and "student effects" (individual learning traits); (c) identify patterns of overt behaviors across effect domains; and (d) continuing through the final stage of clinical analysis, identify the theoretical underpinnings of

the patterns of behavior that define a given variable or characteristic of effective schools.

Figure One illustrates a clinical analysis matrix for the effective school characteristic "Opportunity to Learn". In this example, the effective school characteristic, opportunity to learn, displays itself in the literature and in practice by overt behaviors in a school such as provisions in the master schedule for allotted academic learning time; a minimum of interruption of the classrooms by assemblies, notices from the office, etc.; enforcement of punctual recess periods; the minimization of pull-out programs; etc., as listed under column one of Figure One.

The literature on the characteristic "Opportunity to Learn" couples this school effect with the classroom or teacher effect of "Time-on-Task", which as revealed in practice and in the literature is characterized by overt behaviors such as classes starting on time; evidence of classroom structures; and the monitoring of student engaged learning time by teachers as listed under the second column in Figure One.

It is important to note that the apparent relationship between the school effect variable, opportunity to learn, and the classroom effect variable, time-on-task, is not coincidental. One of the assumptions of clinical analysis is that the overt behaviors of one dimension of the organization (e.g., school effects) facilitate the performance of overt behaviors in another dimension of the

organization (e.g. classroom effects). This is a basic building block of a theory-of-action, and provides direct implications for implementation. The school effect variable, opportunity to learn, for example, facilitates (if not precurses) the classroom effect, time-on-task.

When we look at column three of Figure One, student effects, the prerequisite conditions of school effects and classroom effects become obvious. The overt student behaviors listed in column three describe the student as efficiently and actively engaged in his or her learning. The structures providing for opportunity to learn at the school or building level facilitate classroom time-on-task structures which works to maximize student engaged time. It is seen that the parts of the school system must and can work together for greater student achievement.

Column four in Figure One, finally, reviews the pattern of overt behavior across school effects, teacher effects and student effects, and identifies the theoretical structure or structures which underlie the identified pattern. In this case, the pattern of overt behaviors indicates a consistent application of the "Law of Exercise" (Thorndike, 1931) of operant conditioning as a theoretical basis for the effective school characteristic "opportunity to learn".

FIGURE ONE: THEORETICAL MATRIX FOR THE CHARACTERISTIC OF EFFECTIVE SCHOOLS: OPPORTUNITY TO LEARN

Effect Domains →

Variables ↓

I. School Effects (Characteristics of Effective Schools)	II. Teacher Effects (Classroom Effects)	III. Student Effects (Individual Learning Traits)	IV. Underlying Theoretical Structure(s)
Opportunity to Learn	Time-on-Task	Student Engaged Time	(Behaviorism: Operant Conditioning Law-of-Exercise)
a. Provision in master schedule for allotted academic learning time; b. This time is uninterrupted by assemblies, etc.; c. Recess periods are punctual and as brief as possible d. Minimization of pull-out programs. (Denham & Lieberman, 1980; Edmonds, 1981)	a. Teacher starts classes on time. b. Student engaged-time and/or on-task behavior is monitored and recorded on a regular basis; c. Evidence of teacher directed instruction in a diagnostic-prescriptive manner; d. Evidence of task analysis of any independent work. (Bloom 1976; Lezotte, 1980; Denham & Lieberman, 1980)	a. Students begin class work/ instruction without delay. b. Student repeatedly displays the prescribed or assigned task or behavior; c. Student achieves success on assigned task or behavior most of the time: d. Student seeks out assigned task with alacrity. (Lezotte, 1980 Fairman & Traver, 1981)	The overt behaviors to the left reveal a pattern which, in every case, is designed to maximize student "engaged time" behaviors. Such behaviors appear to be an example of the "Law-of-Exercise" in operation. As such, it is concluded that operant conditioning is a theoretical underpinning of the effective school characteristic "Opportunity to Learn".

This law states:

> Any response to a situation will, other things being equal, be more strongly connected with the situation in proportion to the number of times it has been connected with that situation and to the average vigor and duration of the connections (Thorndike, 1931).

Conclusions

Clinical analysis of underlying theoretical structures can provide unity to the "loosely coupled" or disjointed constructs of the characteristics of effective schools. This analysis reveals a common theoretical basis for behavior across effect domains (i.e., school effects, teacher effects, student effects, as illustrated in Figure One). The analysis also suggests a theory-of-action relative to the characteristics of effective schools, identifying via the listing of overt behaviors what actions might be taken at each level of a school organization to effect greater student achievement.

Finally, via clinical analysis, a theory is generated which serves as a guide to future research. This model can be subject to empirical test in research designs.The theoretical structure as revealed by the clinical analysis of the effective school characteristic, opportunity to learn, states that the principles of behaviorism can be built into the school, the classroom, and ultimately brought to bear on the student to expect learning.

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